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A Contribution to the Ichneumon Wasps (Hymenoptera: Ichneumonidae) from Golestan National Park and Vicinity, Northeastern Iran

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A b s t r a c t : The fauna of Ichneumonidae (Hymenoptera) from Golestan National Park and Vicinity (Northeastern Iran) is studied in this paper. In a total of 14 species from 14 genera (*Pristomerus*, *Temelucha*, *Aclastus*, *Gambus*, *Barytarbes*, *Diadromus*, *Rhexidermus*, *Megastylus*, *Phaestacoenitus*, *Endromopoda*, *Rhyssa*, *Scambus*, *Strongylopsis*, *Lathrolestes*), and 8 subfamilies (Cremastinae, Cryptinae, Ctenopelmatinae, Ichneumoninae, Orthocentrinae, Phuridinae, Pimplinae, Ctenopelmatinae) were collected from this large natural ecosystem.

K e y w o r d s : Ichneumonidae, Parasitoid, Fauna, New record, Golestan National Park, Iran.

Introduction

Conservation of natural resources today is a respected and well-merited doctrine at both national and international levels. National parks possessing diverse examples of biotic communication and ecosystems, serving as scientific land use model and representing outstanding values of natural heritage, are one of the means of expressing this doctrine. The distinguishing characteristic of national parks is the non consumptive use of natural resources. They also have many scientific, cultural, educational and recreational inherent values. The Golestan National Park was the first area in Iran to be designated as a national park. It is located at 37,16° to 37,36° north latitude and 55,44° to 56,17° east longitude and has an area of about 91.000 hectares. The terrain is mountainous with altitude varying between 380 and 2819 meters. The park contains a rich diversity of flora and fauna, unique in many respects (HASSAN ZADEH et al. 1993).

Family Ichneumonidae (Hymenoptera) is one of the most species-rich families of all organisms with an estimated 60,000 species in the world, and included beneficial species which parasitize several pests (TOWNES 1969, GUPTA 1987). The Ichneumonidae, along with other groups of parasitic Hymenoptera, are purported to be no more species rich in the tropics than in the Northern Hemisphere temperate regions (OWEN & OWEN 1974, JANZEN 1981), although a number of hymenopteran families, for example the Chalcididae (HESPENHEIDE 1979) and Encyrtidae (NOYES 1989) exhibit an increase in species richness with a decrease in latitude. Other hymenopteran taxa such as sawflies (Symphyta), gall-forming Cynipidae, and bees (Apoidea) peak in species richness at mid- or high

latitudes (NOYES 1989, KOUKI et al. 1994). Considerable debate has centered on the apparent species richness anomaly exhibited by a number of hymenopteran parasitoid taxa in the tropics (e.g., MORRISON et al. 1978, GAULD 1991). Although the fauna of Iranian Ichneumonidae was studied rather well (KOLAROV & GHAHARI 2005, 2006, 2007, 2008, GHAHARI et al. 2010) but the fauna of these powerful parasitoids was not studied in Golestan National Park so far. In this paper we present the result of a faunistic survey in this region of northeastern Iran.

Materials and Methods

The materials were collected by sweep netting and malaise traps from different regions of Golestan National Park and vicinity through four sampling trips in 2005-2007 by the first author and some of his colleagues and students. Through the faunitic survey, in addition to the collecting of adult Ichneumonidae, many immature insects (especially Lepidoptera and Hymenoptera) were collected and reared in optimum condition (26±2 ºC, 65±5 %RH, 14:10 L:D) in incubator for emergence of inside parasitoids. Classification, nomenclature and distributional data of Ichneumonidae suggested by KASPARYAN (1981), YU & HORSTMANN (1997) and YU et al. (2005) have been followed.

Results

Totally, fourteen species in fourteen genera and eight subfamilies were collected in this faunistic survey. The list of species is given below with host for some species.

Subfamily C r e m a s t i n a e

Genus *Pristomerus* CURTIS 1836

***Pristomerus horribilis* NAROLSKY 1987**

M a t e r i a l : Golestan province: National Park, 1919 m, 1♂, September 2006.

Genus *Temelucha* FÖRSTER 1869

***Temelucha decorate* (GRAVENHORST 1829)**

M a t e r i a l : Golestan province: Armodlu, 1550 m, 1♀, August 2007.

Subfamily C r y p t i n a e

Genus *Aclastus* FÖRSTER 1869

***Aclastus solutus* (THOMSON 1884)**

M a t e r i a l : Golestan province: Sulgard, 1565 m, 1♀, September 2006.

Genus *Gambus* FÖRSTER 1869

***Gambus carnifex* (GRAVENHORST 1829)**

M a t e r i a l : Golestan province: Yaghtiklan, 1920 m, 1♀, August 2007.

Subfamily C t e n o p e l m a t i n a e

Genus *Barytarbes* FÖRSTER 1869

***Barytarbes superbus* (SCHMIEDEKNECHT 1914)**

M a t e r i a l : Golestan province: Ghareh-Ghashli, 1825 m, 1♀, September 2006.

Subfamily I c h n e u m o n i n a e

Genus *Diadromus* WESMAEL 1845

***Diadromus quadriguttatus* GRAVENHORST 1889**

M a t e r i a l : Golestan province: Dasht-e-Mirzabaylu, 1575 m, 2♀♀, August 2007, reared from *Yponomeuta* sp. (Lepidoptera: Yponomeutidae).

Genus *Rhexidermus* FÖRSTER 1869

***Rhexidermus truncator* FÖRSTER 1889**

M a t e r i a l : Golestan province: National Park, 2157 m, 2♀♀, 1♂, June 2006, reared from Lasiocampidae (Lepidoptera). Golestan province: Cheshmeh-khan, 1586 m, 1♀, June 2006, larval parasitoid of *Laspeyresiya* sp. (Lepidoptera: Tortricidae).

Subfamily O r t h o c e n t r i n a e

Genus *Megastylus* SCHIODTE 1839

***Megastylus flavopictus* (GRAVENHORST 1829)**

M a t e r i a l : Golestan province: National Park, 1967 m, 3♀♀, October 2005.

Subfamily P h u r i d i n a e

Genus *Phaestacoenitus* SMITS VAN BURGST 1913

***Phaestacoenitus niger nitidus* KASPARYAN 1983**

M a t e r i a l : Golestan province: Ghareh-Ghashli, 1825 m, 3♀♀, September 2006.

Subfamily P i m p l i n a e

Genus *Endromopoda* HELLÉN 1939

***Endromopoda detrita* (HOLMGREN 1860)**

M a t e r i a l : Golestan province: Dasht-e-Mirzabaylu, 1575 m, 1♀, August 2007.

Genus *Rhyssa* GRAVENHORST 1829

***Rhyssa persuasoria* (LINNAEUS 1758)**

M a t e r i a l : Golestan province: Ghareh-Ghashli, 1825 m, 2♀♀, September 2006.

Genus *Scambus* HARTIG 1838

***Scambus* (*Endromopoda*) *detritus* (HOLMGREN 1860)**

M a t e r i a l : Golestan province: Ghoosh-Cheshmeh, 1612 m, 1♀, September 2006.

Genus *Strongylopsis* BRAUNS 1896

***Strongylopsis belua* KUZIN 1950**

M a t e r i a l : Golestan province: Yaghtiklan, 1920 m, 3♂♂, August 2007.

Subfamily C t e n o p e l m a t i n a e

Genus *Lathrolestes* FÖRSTER 1869

***Lathrolestes ensator* (BRAUNS)**

M a t e r i a l : Golestan province: National Park, 1881 m, 4♀♀, June 2006, larval parasitoid of *Hoplocampa testudinea* (KLUG) (Hymenoptera: Tenthredinidae).

Discussion

The result of the present research indicates that the Golestan National Park included a diverse and interesting fauna of Ichneumonidae. Since there is a diverse flora especially several forest trees (e.g. the dominant plant species *Acanthophyllum* spp., *Acer* spp., *Artemesia* spp., *Berberis* spp., *Carpinus* spp., *Crateagus* pp., *Festuca* spp., *Quercus* spp., *Rhamnus* spp., *Rosa* spp., *Rubus* spp.) in this natural park (HASSAN ZADEH et al. 1993), therefore several insect pests of different orders (especially Lepidoptera and Coleoptera) are injurious to these plants. As we mentioned in introduction, Golestan National Park is a vast region incorporating various geographical regions and diverse ecosystems; therefore we expect that a large number of ichneumonid species (new records and probably new species) remain to be discovered. To find new species and distributional records, more studies should be conducted in this large natural ecosystem. We suggest strongly that other Iranian researchers especially the taxonomists start to faunistic surveys in different regions of Iran for discovering several unknown data about the fauna of Ichneumonidae and other parasitoids and also their hosts.

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Zusammenfassung

Vorliegende Arbeit behandelt die Ichneumonidenfauna des Golestan National Parks und seiner Umgebung im Nordosten des Irans. Insgesamt gelang der Nachweis von 14 Arten aus 14 Gattungen (*Pristomerus*, *Temelucha*, *Aclastus*, *Gambus*, *Barytarbes*, *Diadromus*, *Rhexidermus*, *Megastylus*, *Phaestacoenitus*, *Endromopoda*, *Rhyssa*, *Scambus*, *Strongylopsis*, *Lathrolestes*) aus den folgenden 8 Unterfamilien: Cremastinae, Cryptinae, Ctenopelmatinae, Ichneumoninae, Orthocentrinae, Phuridinae, Pimplinae und Ctenopelmatinae.

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